



UMODPC



Loading Unit Cargo 612-303-02



Vehicle Load Plan Cycle



- Proper load planning & training is essential
- Load plan cycle includes:
 - Planning the load
 - Testing the load
 - Inspecting the load
 - Documenting the load



Planning the Load



- Planning for packing & loading unit equipment is important deployment preparation activity
 - Involves identifying actual space, weight, packaging material & external transport requirements
 - Proper planning saves valuable time when ordered to deploy



Planning the Load (Cont)



- Must determine how much cargo we have to determine how much space we need
- Planning factor used for determining cargo requirements is cubic feet





Cube



- Determine Volume in cubic feet
 - Step 1: Take measurements of the length, width & height in inches
 - Step 2: Multiply length x width x height
 - Step 3: Divide the answer by 1728 to get volume in cubic feet



Cube (Cont)



- A - Add cubic feet measurements of all cargo to get total cubic feet requirement
- B - Add cubic feet measurements of all cargo vehicles to get total cubic feet space available
- Compare A to B, and coordinate for any external cargo lift assets required
- NEVER THAT SIMPLE



Cube (Cont)



- We do add cubic foot measurements of all cargo to get total cubic feet requirement
- Not all equipment comes in a rectangular shaped box.
- Odd sized and heavy items require other considerations
- Must use available space for maximum cube



Weight



- Weight of most military cargo is stenciled on the package. Cargo not stenciled must be weighed before stowing
- Total shipment weight should equal the sum of the individual cargo weights
- Weigh loaded vehicle and record on AUEL
- Dense cargo can cause a vehicle's weight limit to be reached before the cargo space is filled



Vehicle Data Plate



- Never exceed weight capacity of vehicle indicated on vehicle data plate

WEIGHT & DIMENSION DATA

COMBINATION BODY IS PAYLOAD COMPLETELY FILLING BODY

REDUCIBLE TO: 4000

TRUCK, CARGO, 5TON 6-8 M54 W
FEDERAL STOCK NO. 7320 835-8335
VEHICLE IDENT NO.

MFG. BY

CONT. NO.

INSPECTED

US PROPERTY

XXXXXX

WEIGHT	EMPTY	CROSS CTRY	HIGH WALK
PAYLOAD			
FRONT AXLE	XXXX	XXXX	XXXX
INTER AXLE	XXXX	XXXX	XXXX
REAR AXLE	XXXX	XXXX	XXXX
TOTAL LBS	XXXX	XXXX	XXXX
MAX. TONNAGE	XXXX	XXXX	XXXX

SHIPPING CUBAGE XXXX

ALL WEIGHTS LESS CREW

- Always use cross country weight limits



Vehicle Data Plate, cont.



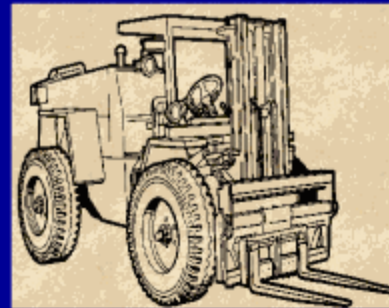
- Axle weight capacity information is located on the vehicle data plate
- 3 different loading weights:
 - Empty, cross country & highway vehicle weight
 - Maximum loaded vehicle weight will always be the cross country weight



Material Handling Equipment



- Consider capabilities of available material handling equipment (MHE)
- Ensure MHE is staged along with required packing material prior to loading
- MHE capability must be equal to or greater than the load





Container Inspection



- Make sure to inspect container for:
 - Cleanliness
 - Tears in skin or holes (watertight integrity)
 - Mold and mildew
 - Door operation and door seals
- There may be added cost for exchanging container after it has been accepted



Container Considerations



- Consider how you will receive containers
 - If you load container that is on a chassis, you will need a ramp or MHE to lift the loads
 - If you load container without chassis, you will need MHE to place container on chassis after loading is completed
- Consider customs inspection requirements
- Consider BBPCT requirements



Loading Considerations



- Make sure vehicle is correctly configured
 - Based on transportation mode(s)
- Check UMC / Port call message for reduction requirements
 - Can use TB 55-46-1 to determine base vehicle height, length & width, and shipping configuration



Balancing Considerations



- Balancing weight is important
 - Unbalanced loads cause damage
- Rules of thumb for weight balance:
 - Load heavy cargo on the bottom
 - Distribute heavy items evenly over vehicle bed
- + Check vehicle data plate for maximum axle weights





Load Considerations



- Pack cargo so it doesn't shift
 - Loading items of uniform size and weight helps simplify lashing
- Block and brace to keep load from shifting
 - Keep load low in vehicle
- Load items for one destination or group items together for ease of handling when offloading





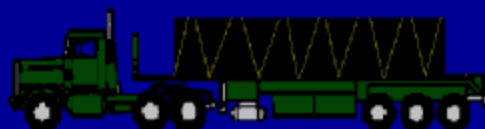
Load Placement in Trucks and Semitrailers



- Select the right vehicle for the right job



Wrong



Right

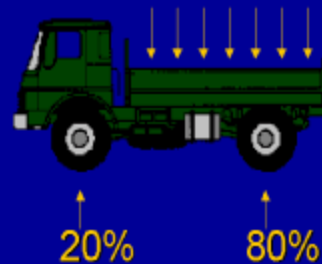


Load Placement in Trucks and Semitrailers, cont.



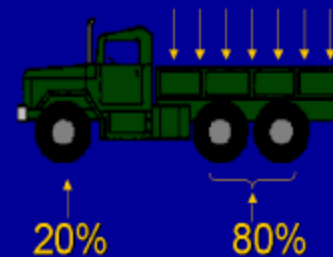
- Tires, axles & frame are designed to carry a load distributed as shown

COE Truck



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Conventional Truck



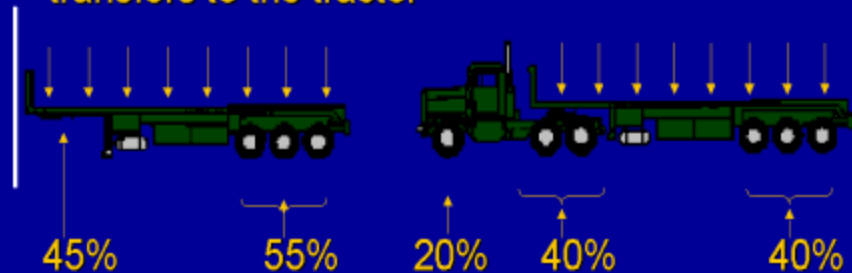
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Load Placement in Trucks and Semitrailers, cont.



- Distribute trailer loads equally between the rear tires & the fifth wheel to ensure load transfers to the tractor





Load Placement in Trucks and Semitrailers, cont.



Wrong

- This load bends the frame, overloads front tires & makes steering harder



Right

- Place heavy part of load near rear axle for proper tire loading & to keep frame from bending



Load Placement in Trucks and Semitrailers, cont.



Wrong

- This load bends the frame, overloads rear tires & makes steering almost impossible



Right

- Set a concentrated load just ahead of the rear axle with the longest side on the floor



Load Placement in Trucks and Semitrailers, cont.



WRONG

- This placement overloads one spring & set of tires; brakes lock on the light side, causing skids



RIGHT

- Nothing is overloaded; frame will not twist & stress suspension



Load Placement Containers



Wrong

- This placement shortens tire life & bends the trucks rear-axle housing; applying trailer brakes may lock the wheels & cause flat spots & skidding



Wrong

- This placement overloads the trailer rear wheels so that brakes will not function properly & rubber scuffs away



Load Placement Containers, cont.



Right

- This container is loaded with the load spread low on the floor. (What is missing?)



Record Weight



- Record weight & compare to the AUEL
 - Verify the actual weight & dimensions of each piece of cargo, and vehicle with cargo
 - Update AUEL if discrepancies are found
- You must physically weigh each vehicle after it is loaded

**NEVER EXCEED VEHICLE'S CROSS
COUNTRY WEIGHT LIMITS**



Lessons Learned



- Tractor trailer that overloaded a bridge





Securing Cargo in Vehicles and Containers



Loading Vehicles and Containers



- Use boxes, tri-walls, containers, etc, to ship remainder of unit equipment and supplies.
- Proper packing and bracing protects equipment
- Containers provide:
 - Security
 - Weather Protection
 - Less damage to the cargo (If braced)



Packing Materials



- Types of packing materials:
 - Bubble wrap
 - Foam packing
 - Corrugated cardboard
 - Desiccant to dehumidify
 - Pneumatic & mechanical holding devices
- Materials also needed to close and secure boxes/cartons



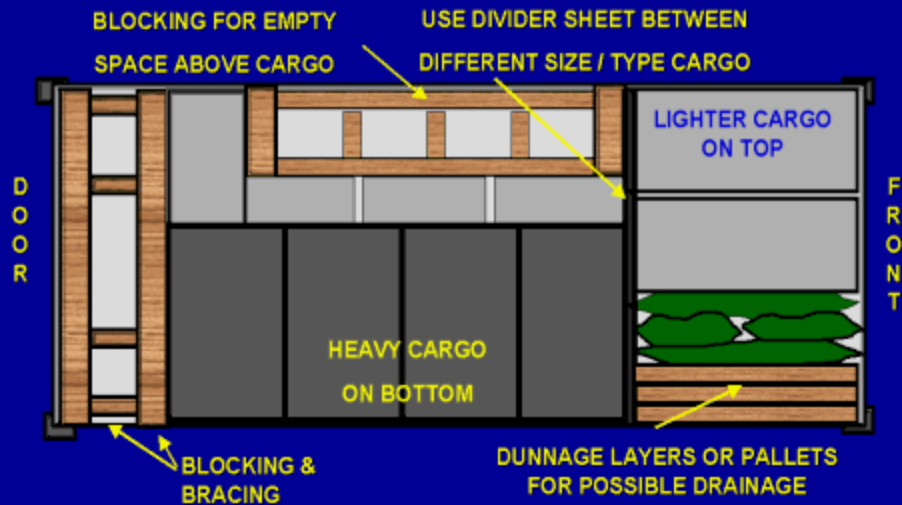
Containers



- Rules for loading containers:
 - Block & brace the cargo - bottom, sides & front (stay 6 inches away from the door)
 - Distribute the weight evenly - heavy items on the bottom of the container - never overload
 - Package liquid on dunnage
 - Group cargo according to use at destination for ease of handling when off-loading



Containers, cont.



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Blocking, Bracing, Packing, Crating, Tiedown (BBPCT)

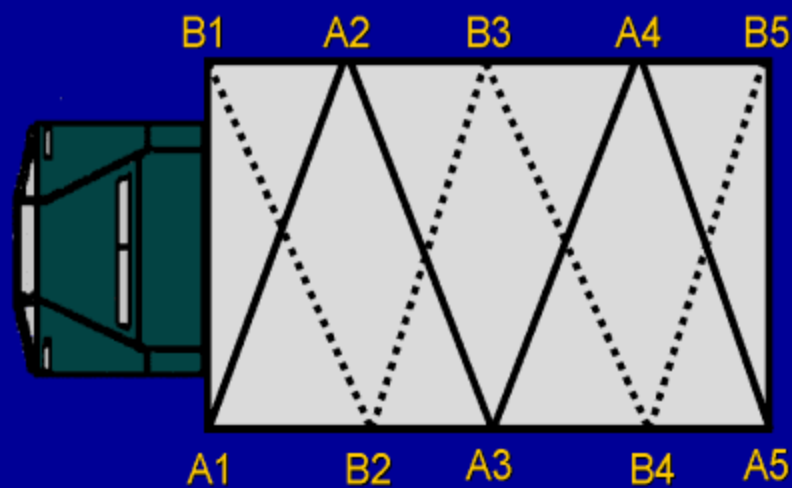


- Units are responsible for securing their cargo
- Lashing should be:
 - 1/2" manila rope, wire rope or banding material
 - Attach to cargo hooks on sides of trucks





Lashing





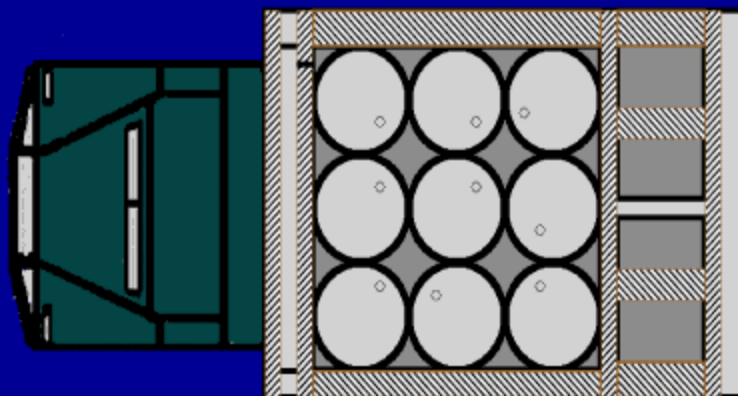
Blocking and Bracing



- Your unit is responsible for the blocking & bracing of unit equipment and containers
 - Use crib blocking whenever possible
 - Block cargo on all sides: front, back, sides & door area
 - Ensure there is no metal-to-metal contact
Use plywood, wood or cardboard



Blocking and Bracing a 2 1/2 ton truck rear



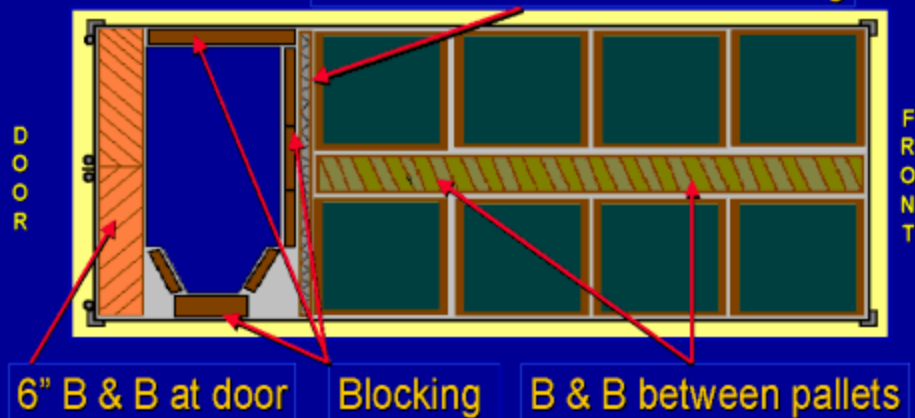
- Denotes Blocking & Bracing



Blocking and Bracing a Container



False wall / side to side bracing





Cargo Protection



- Protect cargo from weather & elements
 - Place dunnage over corners to protect canvas
 - Cover open topped vehicles with canvas before lashing
 - Protect crew-served weapons from elements with a coating of grease



Marking of Vehicles



- Proper marking of unit vehicles and equipment:
 - FORSCOM/ARNG Reg 55-1, requires marking on front and back
 - Use 2" lettering placing UIC and SUN on bumpers
 - Suggested to mark all Secondary loads that may be moved separately
- See App G to FORSCOM/ARNG Reg 55-1



Special Cargo Considerations



Special Cargo Categories



- Hazardous cargo (discussed in another lesson)
- Other Categories
 - Sensitive items
 - Classified material
 - Pilferable items



Sensitive Items



- Reference FM-55-65, Appendix F
- Sensitive cargo is cargo that could be a threat to public safety if the cargo comes into the possession of adversaries
- Sensitive cargo must be secured & identified to port personnel so they can provide appropriate security





Sensitive Items, cont.



- Rules for sensitive cargo:
 - Packaging material must be strong & durable enough to provide security protection in transit
 - Containers, vehicles & compartments must be secured with a appropriate locking device/seal
 - Sensitive items must be identified in the commodity code of the unit's AUEL
 - Container must NOT indicate in any way that it contains sensitive items



Classified Cargo



- Classified cargo is cargo requiring protection in the interest of national security
- Must NOT be identified on outer containers
- Unit provides special handling
- Classified material must be enclosed in 2 sealed containers: an inner container and outer container
- Units must comply with AR 380-5. Use Appendix F of FM 55-65 for additional information.



- DD Form 1907

[illegible]



Pilferable Items



- Pilferable items are items of value to individuals that can be readily removed & concealed (radios, binoculars, compasses, etc..)
 - Consider removing pilferable items from vehicles & packing them together





Security



- Be prepared for acts of sabotage, espionage & terrorism in both CONUS & OCONUS theaters
- Guard against theft & pilferage
- Degree of security required will determine the need for outside support
- References: FM 100-20
FM 55-65, Appendix F & G